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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/828,340	04/21/2004	Shuhei Yada	2004_0589A	5472
513	7590	09/29/2006	EXAMINER	
WENDEROTH, LIND & PONACK, L.L.P. 2033 K STREET N. W. SUITE 800 WASHINGTON, DC 20006-1021			MANOHARAN, VIRGINIA	
			ART UNIT	PAPER NUMBER
			1764	

DATE MAILED: 09/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/828,340

Applicant(s)

YADA ET AL.

Examiner

Virginia Manoharan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 17-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

Claims 17-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a). The claimed "collection column", numerous recited in the claims, provides for ambiguity and confusion because a collecting device would presupposed merely for collection purposes. The claimed invention appears to be performing a distillation function which can occur in a distillation column with top and bottoms product obtained based on temperature difference. [Compare e.g., with page 10, lines 21-26].

Also the claimed "the reaction gas is collected in the aqueous medium" in claim 17 is not understood. Is the reaction gas being absorbed or extracted by the aqueous medium?

b). It is unclear what method/process causes the reaction gas to flow out from the top of the column and the acrylic acid aqueous solution to flow out of the bottom of the column?

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 17-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0778255 in view of Leacock (4,147,721).

The EP '255 is applied for the same reasons as set forth at the paragraph bridging pages 2 and 3 of the previous Office Action, dated March 15, 2006.

Leacock discloses the concept of performing heat removal in a distillation column by using a heat-removing device on the column. Given that concept [In re Bascom, 230 F. 2d 612, 109 USPQ 98 (CCPA 1956)], one would have been led to modify EP' 255 such that a heat removal device is incorporated in the process/method of EP '255, as in claim 17, motivated by the reasonable expectation of optimizing heat usage; and since Leacock also suggests that it would optimize recovery of methacrylic acid while minimizing the size and operating costs of the equipment involved. See col. 5, lines 17-65.

Applicants' arguments filed July 14, 2006 have been fully considered but they are not persuasive.

Applicants' arguments that the "EP 0778225 (lip '233) neither discloses or suggests... (1) a collection column with a heat-removing device attached thereto; and (2) controlling the amount of heat removed in the collection column so that  $B/A$  meets the condition  $0.8 < B/A < 1.25$  are not persuasive of patentability because of the following reasons:

However, the above argued "heat- removing device" is not an unobvious subject matter nor is it indicative of criticality as taught by Leacock, discussed supra. The rejection is based on a combination of references. Furthermore, while the  $0.8 < B/A < 1.25$  is not positively disclose in EP '225, however, column 11, lines

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10-13, and the Examples and Comparative Examples of EP '255 all mention the amount or concentration of the acrylic at the top and at the bottoms of the tower. Thus, it tells an artisan that an optimum range relative to the top and bottoms acrylic values exists.[Any experimentation done to find this optimal range is of the essence within the skilled of the art].

Absolute predictability is not a prerequisite for obviousness rejection All that is required to show obviousness is that the applicant make his claimed invention merely by applying knowledge clearly present in the prior art. Section 103 requires us to presume full knowledge by the inventor of the prior art in the filed of his endeavor. See In re Winslow, 53 CCPA 1574, 1578, 365 F.2d 1017, 1020, 151 USPQ 48, 50-51 (1966). No commercial success is claimed, nor is any other factor indicating nonobviousness shown to exist.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will


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the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Virginia Manoharan whose telephone number is 571-272-1450.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola, can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
VIRGINIA MANOHARAN  
PRIMARY EXAMINER  
ART UNIT 1831 764